



TYPHOON LOLA

Typhoon Lola was spawned within a very active trough located between the equator and 12N, from the Philippines eastward to 150E. On the 20th of September 1978, satellite imagery gave the first indication of a disturbance near 08N-147E; however, a distinct surface circulation was not evident. Between the 20th and the 24th, the disturbance slowly accelerated to the northwest then west-northwest through the Caroline Islands passing between Ulithi and Guam on the 22nd with 15-20 kt (7-10 m/sec) intensity. A tropical cyclone formation alert was issued at 240600Z when increased organization in feeder band activity was noted on satellite imagery and potential for further development was evident. Based on aircraft and satellite data, the first warning on Tropical Depression 22 (TD-22) was issued at 241200Z with 25 kt (13 m/sec) intensity.

During the 24th and 25th, TD-22 maintained a westward movement within the near equatorial trough on a heading 10 degrees north of the trough axis. This westward movement toward the central Philippines was supported by easterlies along the southern periphery of the mid-tropospheric subtropical ridge. Aircraft data at 252100Z positioned the circulation 110 nm (205 km) east of Samar. Increased organization and a central pressure of 995 mb were noted which resulted in upgrading the system to Tropical Storm Lola at 260000Z. Landfall was made on the southeastern tip of Luzon at 261500Z. Lola's subsequent track during the 27th took her along the southern coast of Luzon passing over the cities of Legaspi and Batangas. The closest point of approach (CPA) to Manila occurred at 271000Z as Lola passed 35 nm (65 km) to the southwest. At this time, the International Airport at Manila reported 30 kt (15 m/sec) sustained winds with gusts to 50 kt (26 m/sec). The Naval Weather Service Environmental Detachment (NWSED) at Cubi Pt. recorded maximum sustained winds of 40 kt (21 m/sec) with a peak gust of 59 kt (30 m/sec) at 271241Z. Nineteen deaths and heavy

property damage in the southern Tagalog and Bicol regions were attributed to Lola's passage. As Lola exited into the South China Sea, the 500 mb analysis indicated a short wave trough in the westerlies over China extending as far south as 27N with a weakness in the subtropical ridge forming over southern China. By 280000Z, the trough extended to 23N along 105E and the subtropical high center east of the weakness had moved eastward across the northern Philippines. This caused Lola's dominant mid-level steering flow to become southeasterly which resulted in her more climatological northwest track over the South China Sea. Supported by good upper-tropospheric outflow and strong low-level energy input, gradual intensification occurred from 271800Z through 301800Z. Based on aircraft data, Lola was upgraded to typhoon intensity at 281800Z. During the 29th and 30th of September, Lola reached maximum intensity with sustained winds of 75 kt (39 m/sec) and a minimum pressure of 963 mb. The mid-tropospheric ridge began strengthening westward resulting in Lola's track becoming more west-northwest toward Hainan Island. Landfall over Hainan occurred at 010900Z October, 10 nm (19 km) southeast of Wenchang.

Weakened by terrain features, Lola was downgraded to a tropical storm at 011200Z as she continued west-northwestward into northern Vietnam. The final warning downgrading Lola to tropical depression intensity was issued at 030000Z. Lola's overall uncomplicated track produced the lowest 24-, 48- and 72-hour forecast vector errors (54, 116 and 139 nm respectively) of the 1978 storm season. The 24- and 48-hour forecast vector errors were especially low (average of 21 nm (39km) and 40 nm (74km) respectively) during Lola's passage over the Philippines. This resulted from the increased accuracy of fix positions due to additional land radar and synoptic reports, the uncomplicated track, and the fact that Lola remained a well-organized system during transit allowing accurate fixing.